



STIC Search Report

EIC 1700

STIC Database Tracking Number: 148185

**TO: John Goodrow
Location: REM 10A45
Art Unit : 1756
April 1, 2005**

Case Serial Number: 10/657484

**From: Les Henderson
Location: EIC 1700
REM 4B28 / 4A30
Phone: 571-272-2538**

Leslie.henderson@uspto.gov

Search Notes

There are no hits for the calcium diazo dye you submitted (L8). The compound is in the registry file (L7), but not even the application shows up yet in STN. I did find other salts and isomers, which are included.

=> d his

(FILE 'HOME' ENTERED AT 10:38:30 ON 01 APR 2005)

FILE 'HCA' ENTERED AT 10:38:41 ON 01 APR 2005

E 20050054385/PN
E US20050054385/PN
E BINDRA AMRIT/AU

L1 9 S E3-E5
L2 11364 S RED(2A)PIGMENT?
L3 2 S L1 AND L2
SEL L3 RN

FILE 'REGISTRY' ENTERED AT 10:45:03 ON 01 APR 2005

L4 24 S E1-E24

FILE 'LREGISTRY' ENTERED AT 10:51:23 ON 01 APR 2005

FILE 'REGISTRY' ENTERED AT 11:04:50 ON 01 APR 2005

E C20H14N2O7S2.CA/MF
L5 4 S C20H14N2O7S2.CA/MF
E C20H14N2O7S2.CA/MF
L6 10 S E5-8
L7 1 S 83249-60-9/RN

FILE 'HCA' ENTERED AT 11:15:00 ON 01 APR 2005

E COMPOSITION/CT
E COATING/CT

L8 0 S L7

FILE 'REGISTRY' ENTERED AT 11:19:43 ON 01 APR 2005

L9 1 S 141025-34-5/RN
E 73019-25-7/RN
L10 1 S 73019-25-7/RN
E 67990-37-8/RN
L11 1 S 67990-37-8/RN

FILE 'HCA' ENTERED AT 11:37:03 ON 01 APR 2005

FILE 'CAOLD' ENTERED AT 11:37:17 ON 01 APR 2005

L12 0 S L7

FILE 'HCAPLUS' ENTERED AT 11:38:18 ON 01 APR 2005

L13 0 S L7
L14 1 S L9
L15 0 S L10
L16 0 S L11

FILE 'CAOLD' ENTERED AT 11:41:52 ON 01 APR 2005

L17 0 S L9-L11

FILE 'REGISTRY' ENTERED AT 11:42:29 ON 01 APR 2005

E C20H14N2O7S2.CA/MF
E 410538-28-2/RN
L18 1 S 410538-28-2/RN
E 250639-69-1/RN
L19 1 S 250639-69-1/RN
E 139966-00-0/RN
L20 1 S 139966-00-0/RN

L21 E 90333-45-2/RN
1 S 90333-45-2/RN
E 62681-89-4/RN
L22 1 S 62681-89-4/RN
E 62681-88-3/RN
L23 1 S 62681-88-3/RN

FILE 'HCAPLUS' ENTERED AT 11:54:29 ON 01 APR 2005

L24 0 S L18
L25 1 S L19
L26 0 S L20
L27 1 S L21
L28 1 S L22
L29 1 S L23

FILE 'CAOLD' ENTERED AT 11:56:51 ON 01 APR 2005

L30 0 S L18-L23

FILE 'REGISTRY' ENTERED AT 11:57:19 ON 01 APR 2005

L31 3 S L9-L11
L32 6 S L18-L23

FILE 'HCAPLUS' ENTERED AT 11:59:32 ON 01 APR 2005

L33 4 S L14 OR L24-L29

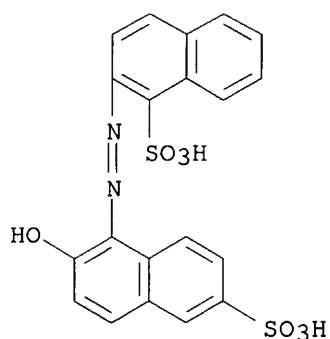
FILE 'REGISTRY' ENTERED AT 12:03:18 ON 01 APR 2005

=> d 17 all

L7 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN
RN **83249-60-9** REGISTRY
ED Entered STN: 16 Nov 1984
CN 1-Naphthalenesulfonic acid, 2-[(2-hydroxy-6-sulfo-1-naphthalenyl)azo]-, calcium salt (1:1) (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . Ca
LC STN Files: CHEMLIST
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (111797-52-5)

Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



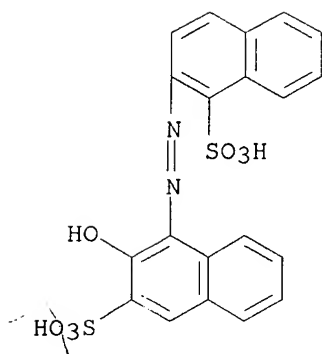
● Ca

=> d l31 1-3 all

L31 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN
 RN **141025-34-5** REGISTRY
 ED Entered STN: 01 May 1992
 CN 1-Naphthalenesulfonic acid, 2-[(2-hydroxy-3-sulfo-1-naphthalenyl)azo]-, calcium salt (1:1) (9CI) (CA INDEX NAME)
 MF C20 H14 N2 O7 S2 . Ca
 SR CA
 LC STN Files: CA, CAPLUS
 DT.CA Cplus document type: Patent
 RL.P Roles from patents: USES (Uses)
 CRN (787518-41-6)

Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Ca

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 116:257360 CA
 TI Preparation of mixed laked azo pigments
 IN Necas, Miroslav; Plechacek, Vaclav
 PA Czech.
 SO Czech., 4 pp.
 CODEN: CZXXA9
 DT Patent
 LA Czech
 IC ICM C09B065-00
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CS 268606	B1	19900314	CS 1988-6215	19880919
PRAI	CS 1988-6215		19880919		

AB Red pigments for printing inks, varnishes, and plastics with brilliant modified shades are prepared by coupling a mixture containing 75-99.5% diazotized 2,4,5-H₂N(R₁)(R₂)C₆H₂SO₃H (R₁, R₂ = H, Cl, Me) and 0.5-25% diazotized 2,n-H₂NC₁₀H₆SO₃H (n = 1, 5, 6, 7, 8) with 3,2-HOC₁₀H₆CO₂H (I) and laking the zo dye with Ca, Ba, Mg, Sr, or Mn. A mixture containing 96 mol% Ca salt of 2,4-HO₃S MeC₆H₃NH₂ → I (II) and 4 mol% Ca salt of 1,2-HO₃SC₁₀H₆-NH₂ → I was prepared in this way and had a more bluish shade than II.

ST azo pigment mixt lake

IT Pigments

(azo, laked, manufacture of mixed, with modified shade)

IT 81-16-3, 2-Naphthylamine-1-sulfonic acid 86-60-2,
 2-Naphthylamine-8-sulfonic acid 88-44-8, 4-Aminotoluene-3-sulfonic acid 140921-46-6

RL: USES (Uses)

(coupling of diazotized, with hydroxynaphthoic acid)

IT 92-70-6, 3-Hydroxy-2-naphthoic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(coupling of, with mixts. of diazotized aminobenzene- and

-naphthalenesulfonic acids)

IT 73612-29-0 141025-33-4 141025-34-5 141025-35-6 141025-36-7
141025-37-8

RL: USES (Uses)

(mixts. containing, manufacture of, as pigments)

L31 ANSWER ² OF 3 REGISTRY COPYRIGHT 2005 ACS on STN

RN 73019-25-7 REGISTRY

ED Entered STN: 16 Nov 1984

CN 2,7-Naphthalenedisulfonic acid, 4-[(2-hydroxy-1-naphthalenyl)azo]-,
calcium salt (1:1) (9CI) (CA INDEX NAME)

MF C20 H14 N2 O7 S2 . Ca

LC STN Files: CHEMLIST

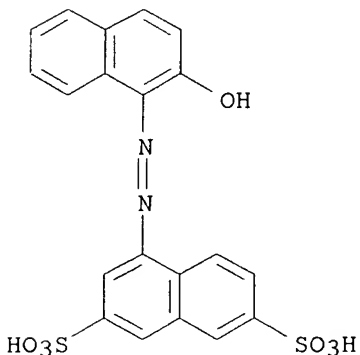
Other Sources: NDSL**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

CRN (90339-80-3)

Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Ca

L31 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN

RN 67990-37-8 REGISTRY

ED Entered STN: 16 Nov 1984

CN 1,5-Naphthalenedisulfonic acid, 2-[(2-hydroxy-1-naphthalenyl)azo]-,
calcium salt (1:1) (9CI) (CA INDEX NAME)

MF C20 H14 N2 O7 S2 . Ca

LC STN Files: CHEMLIST

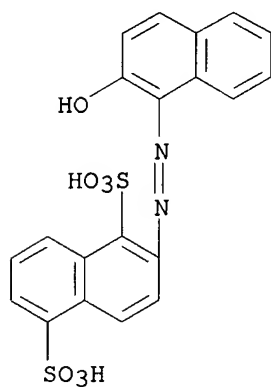
Other Sources: EINECS**, NDSL**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

CRN (116680-42-3)

Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
=====	=====	=====	=====	=====	=====
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Ca

=> d que stat l32

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L18      1 SEA FILE=REGISTRY ABB=ON  PLU=ON  410538-28-2/RN
L19      1 SEA FILE=REGISTRY ABB=ON  PLU=ON  250639-69-1/RN
L20      1 SEA FILE=REGISTRY ABB=ON  PLU=ON  139966-00-0/RN
L21      1 SEA FILE=REGISTRY ABB=ON  PLU=ON  90333-45-2/RN
L22      1 SEA FILE=REGISTRY ABB=ON  PLU=ON  62681-89-4/RN
L23      1 SEA FILE=REGISTRY ABB=ON  PLU=ON  62681-88-3/RN
L32      6 SEA FILE=REGISTRY ABB=ON  PLU=ON  (L18 OR L19 OR L20 OR
      L21 OR L22 OR L23)

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=> d l32 1-6 all

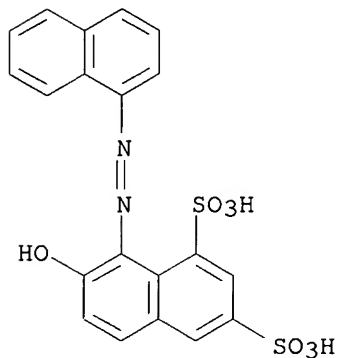
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L32  ANSWER 1 OF 6  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   410538-28-2  REGISTRY
ED   Entered STN:  03 May 2002
CN   1,3-Naphthalenedisulfonic acid, 7-hydroxy-8-(1-naphthalenylazo)-,
      monosodium salt (9CI)  (CA INDEX NAME)
MF   C20 H14 N2 O7 S2 . Na
SR   Chemical Library
LC   STN Files:  CHEMCATS
CRN  (22915-90-8)

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Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
=====	=====	=====	=====	=====	=====
C6-C6	C6-C6	6-6	C10	591.49.57	2

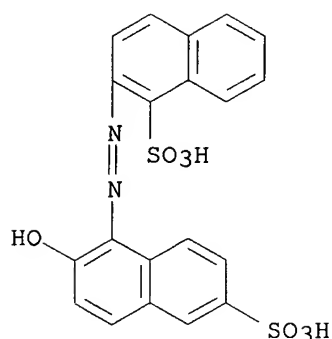


● Na

L32 ANSWER 2 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN
 RN **250639-69-1** REGISTRY
 ED Entered STN: 13 Dec 1999
 CN 1-Naphthalenesulfonic acid, 2-[(2-hydroxy-6-sulfo-1-naphthalenyl)azo]-, strontium salt (1:1) (9CI) (CA INDEX NAME)
 MF C20 H14 N2 O7 S2 . Sr
 SR CAS Client Services
 LC STN Files: CA, CAPLUS, USPATFULL
 DT.CA Caplus document type: Patent
 RL.P Roles from patents: PREP (Preparation)
 CRN (111797-52-5)

Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
=====	=====	=====	=====	=====	=====
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Sr

1 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 142:262349 CA
 TI Heat stable laked monoazo red pigment and its manufacture
 IN Bindra, Amrit P.
 PA USA
 SO U.S. Pat. Appl. Publ., 11 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM C09D011-00
 ICS G03G009-00
 NCL 106031800
 CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 41, 42

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005051050	A1	20050310	US 2003-657485	20030908
WO 2005026264	A1	20050324	WO 2004-028950	20040903

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2003-657485 20030908

AB The title red pigment has a unique x-ray diffraction pattern. Use of certain surface active agents e.g. alkylamine-guanidine polyoxyethanol during the coupling reaction facilitates the subsequent formation of the laked monoazo red pigments in the β

crystal form with a distinct X-ray diffraction pattern. The X-ray diffraction pattern comprises high diffraction intensities at diffraction angles of .apprx.10.4°, .apprx.17.5°, .apprx.18.7°, .apprx. 21.6° and .apprx.23°; moderate diffraction intensities at .apprx.14.4°, .apprx.15°, .apprx.24.4°, .apprx.24.8°, .apprx.25.2° and .apprx.26.2°; and low diffraction intensities at .apprx.about 15.4°, .apprx.17.5°, .apprx.17.8°, .apprx.19.3°, .apprx.20°, .apprx.21°, .apprx.21.8°, .apprx.26.6°, .apprx.28.6°, .apprx.30.2°, .apprx.31.6°, .apprx.32.1°, .apprx.34.8° and .apprx.38°.

Also, the pH ranges described facilitate the formation of the laked monoazo red pigments in the β crystal form with a distinct X-ray diffraction pattern. Coating compns., ink compns., plastic compns., electrostatic toner compns., powder coating compns., paint compns., and paper compns. containing the red pigment have high chroma.

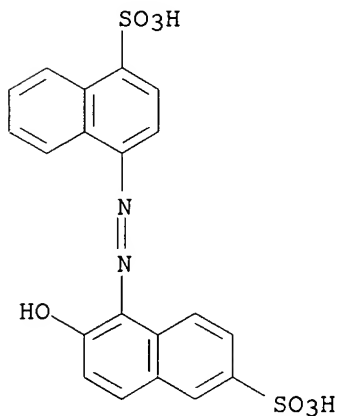
- ST naphthalenesulfonic monoazo strontium salt pigment prepn
- IT Amides, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (coco, N-[3-(dimethylamino)propyl], N-oxides; heat stable laked monoazo red pigment)
- IT Amine oxides
 RL: NUU (Other use, unclassified); USES (Uses)
 (cocoalkyldimethyl; heat stable laked monoazo red pigment)
- IT Azo dyes
 Pigments, nonbiological
 (heat stable laked monoazo red pigment)
- IT Coating materials
 Electrographic toners
 Inks
 Surfactants
 Viscose
 (heat stable laked monoazo red pigment for)
- IT Polyamides, uses
 Polycarbonates, uses
 Polyesters, uses
 Polyimides, uses
 Polyurethanes, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (heat stable laked monoazo red pigment for)
- IT 41489-81-0, Sodium 2-hydroxynaphthalene-6-sulfonate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (coupling component; heat stable laked monoazo red pigment)
- IT 81-16-3, 2-Aminonaphthalene-1-sulfonic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (diazotization; heat stable laked monoazo red pigment)
- IT 1643-20-5, Lauryl dimethylamine oxide 2571-88-2, Stearyl dimethylamine oxide 3332-27-2, Myristyldimethylamine oxide 7128-91-8, Dimethylhexadecylamine oxide
 RL: NUU (Other use, unclassified); USES (Uses)
 (heat stable laked monoazo red pigment)
- IT 9003-53-6, Polystyrene 25014-41-9, Polyacrylonitrile
 RL: TEM (Technical or engineered material use); USES (Uses)
 (heat stable laked monoazo red pigment for)
- IT 9002-88-4, Polyethylene
 RL: TEM (Technical or engineered material use); USES (Uses)
 (pigmented test piece; heat stable laked monoazo red pigment for)
- IT 250639-69-1P

RL: IMF (Industrial manufacture); PREP (Preparation)
(β crystal form; heat stable laked monoazo red pigment)

L32 ANSWER 3 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN
RN **139966-00-0** REGISTRY
ED Entered STN: 27 Mar 1992
CN 1-Naphthalenesulfonic acid, 4-[(2-hydroxy-6-sulfo-1-naphthalenyl)azo]-, monosodium salt (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . Na
CI COM
SR CA
LC STN Files: BEILSTEIN*
(*File contains numerically searchable property data)
CRN (25317-26-4)

Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
C6-C6	C6-C6	6-6	C10	591.49.57	2

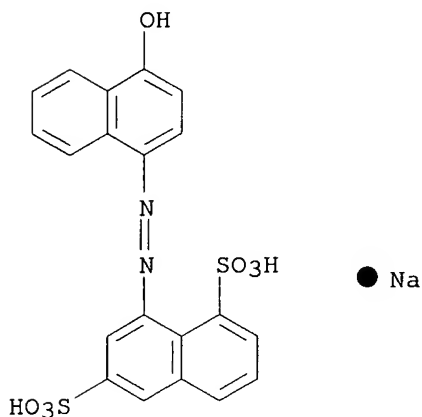


● Na

L32 ANSWER 4 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN
RN **90333-45-2** REGISTRY
ED Entered STN: 16 Nov 1984
CN 1,6-Naphthalenedisulfonic acid, 8-[(4-hydroxy-1-naphthalenyl)azo]-, monopotassium monosodium salt (9CI) (CA INDEX NAME)
MF C20 H14 N2 O7 S2 . K . Na
LC STN Files: CA, CAPLUS
DT.CA CAplus document type: Patent
RL.P Roles from patents: USES (Uses)
CRN (687614-15-9)

Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



● K

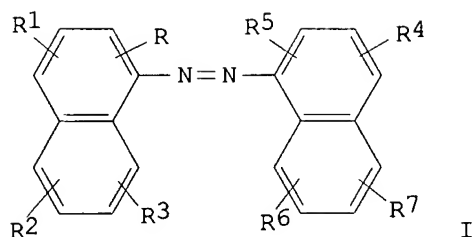
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 101:25140 CA
TI Recording solutions
PA Canon K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC C09D011-00; C09D011-16
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 41

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 58176260	A2	19831015	JP 1982-57985	19820409
PRAI	JP 1982-57985		19820409		
GI					



AB The recording solns. contain compds. I [R, R1, R2, R3 = H, halogen, OH, NO2, Me, OMe, SO3R8; R4, R5, R6, R7 = H, OH, SO3R8; ≥ 1 substituent of R4-7 is OH; R8 = alkali metal, (substituted) ammonium, amine moiety] are claimed. The solns. for ink-jet recording containing I have excellent and well-balanced recording properties, storage stability, dissoln. stability in liquid solvents, and setting properties on printing paper, and give printed letters showing excellent weatherability, light resistance, water resistance, and alc. resistance. Thus, a SiO2 layer was laminated onto an alumina plate by sputtering; a HfB2 resistance-heating layer was laminated on the SiO2 layer to give a resistance-heating pattern by selective etching, where a SiO2 protective layer was laminated to give an elec. heat exchanger. A glass plate was connected with the exchanger so that its grooves agreed with the resistance-heating body to give a recording head. Sep., I (R6 = 8-OH; R7 = 6-SO3Na; R and R1-5 = H) [90333-47-4] 3, diethylene glycol 25, N-methyl-2-pyrrolidinone 20, and H2O 52 parts were mixed and dissolved to give a solution, which was used with the above recording head to five 150 h of continuous recording.

ST azo jet printing ink; hydroxyazonaphthalene jet printing ink; recording head jet printing ink

IT Recording apparatus
(heads, photo-alumina-hafnium boron-glass, for jet-printing inks)

IT Dyes, azo
(hydroxyazonaphthalenes, jet-printing inks containing, storage-stable, for continuous use)

IT Inks
(jet-printing, hydroxyazonaphthalene-based, storage-stable, for continuous use)

IT 2653-72-7 5851-03-6 5858-33-3 90333-33-8 90333-34-9
90333-35-0 90333-36-1 90333-37-2 90333-38-3 90333-39-4
90333-40-7 90333-41-8 90333-42-9 90333-43-0 90333-44-1
90333-45-2 90333-46-3 90333-47-4 90339-77-8 90339-81-4

RL: USES (Uses)

(inks, jet-printing, storage-stable, for continuous use)

IT 7631-86-9, uses and miscellaneous

RL: USES (Uses)

(laminates with aluminum and hafnium boride and glass, recording heads, for jet-printing inks)

IT 12007-23-7

RL: USES (Uses)

(laminates with silica and alumina and glass, recording heads, for jet-printing inks)

IT 1344-28-1, uses and miscellaneous

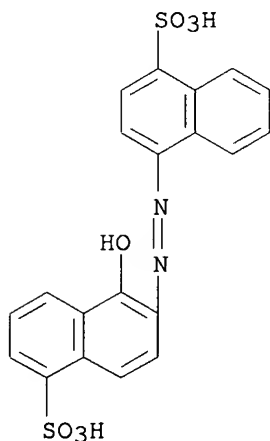
RL: USES (Uses)

(laminates with silica and hafnium boride and glass, recording heads, for jet-printing inks)

L32 ANSWER 5 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN
 RN **62681-89-4** REGISTRY
 ED Entered STN: 16 Nov 1984
 CN 1-Naphthalenesulfonic acid, 5-hydroxy-6-[(4-sulfo-1-naphthalenyl)azo]-, monosodium salt, radical ion(1-) (9CI) (CA INDEX NAME)
 MF C20 H14 N2 O7 S2 . Na
 CI RIS
 LC STN Files: CA, CAPLUS
 DT.CA Caplus document type: Journal
 RL.NP Roles from non-patents: RACT (Reactant or reagent)
 CRN (763028-67-7)

Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Na

1 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 86:170246 CA
 TI ESR investigation of the radical intermediates formed in the photoreduction of azo dyes
 AU Heijkoop, G.; Van Beek, H. C. A.
 CS Lab. Chem. Technol., Univ. Technol., Delft, Neth.
 SO Recueil des Travaux Chimiques des Pays-Bas (1977), 96(3), 83-5

CODEN: RTCPA3; ISSN: 0165-0513

DT Journal
 LA English
 CC 22-2 (Physical Organic Chemistry)
 Section cross-reference(s): 40

AB ESR spectra of hydrazyl and aminonaphthoxy radicals formed upon photoredn. of azo dyes were measured. For the hydrazyl radicals the results obtained further confirm previous investigations of the mechanism of photoredn. of azo dyes. The direct identification in photoreduced dye solns. of aminonaphthoxy radicals, which are formed in the oxidation reduction equilibrium of aminonaphthols and iminoquinones provides strong evidence for previously proposed mechanisms for the disproportionation of hydrazyl radicals.

ST azo dye photoredn mechanism; ESR hydrazyl aminonaphthoxy
 IT Radicals, preparation
 RL: FORM (Formation, nonpreparative)
 (formation of, in photoredn. of azo dyes, ESR of)

IT Electron spin resonance
 (of aminonaphthoxy and hydrazyl radicals, from photoredn. of azo dyes)

IT Reduction, photochemical
 (of azo dyes, ESR of radicals from)

IT Dyes, azo
 (photoredn. of, ESR of radicals from)

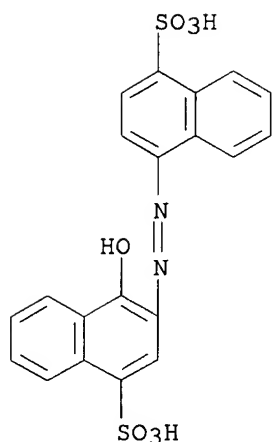
IT 62681-71-4 62681-72-5 62681-73-6 62705-58-2
 RL: PRP (Properties)
 (ESR of)

IT 62681-88-3 62681-89-4 62681-90-7 62681-91-8 62681-92-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (photoredn. of, ESR of radicals from)

L32 ANSWER 6 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN
 RN **62681-88-3** REGISTRY
 ED Entered STN: 16 Nov 1984
 CN 1-Naphthalenesulfonic acid, 4-hydroxy-3-[(4-sulfo-1-naphthalenyl)azo]-, monosodium salt, radical ion(1-) (9CI) (CA INDEX NAME)
 MF C20 H14 N2 O7 S2 . Na
 CI RIS
 LC STN Files: CA, CAPLUS
 DT.CA CAPLUS document type: Journal
 RL.NP Roles from non-patents: RACT (Reactant or reagent)
 CRN (783249-96-7)

Ring System Data

Elemental Analysis	Elemental Sequence	Size of the Rings	Ring System Formula	Ring Identifier	RID Occurrence
EA	ES	SZ	RF	RID	Count
=====	=====	=====	=====	=====	=====
C6-C6	C6-C6	6-6	C10	591.49.57	2



● Na

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1

AN 86:170246 CA
TI ESR investigation of the radical intermediates formed in the photoreduction of azo dyes
AU Heijkoop, G.; Van Beek, H. C. A.
CS Lab. Chem. Technol., Univ. Technol., Delft, Neth.
SO Recueil des Travaux Chimiques des Pays-Bas (1977), 96(3), 83-5
CODEN: RTCPA3; ISSN: 0165-0513
DT Journal
LA English
CC 22-2 (Physical Organic Chemistry)
Section cross-reference(s): 40
AB ESR spectra of hydrazyl and aminonaphthoxy radicals formed upon photoredn. of azo dyes were measured. For the hydrazyl radicals the results obtained further confirm previous investigations of the mechanism of photoredn. of azo dyes. The direct identification in photoreduced dye solns. of aminonaphthoxy radicals, which are formed in the oxidation reduction equilibrium of aminonaphthols and iminoquinones provides strong evidence for previously proposed mechanisms for the disproportionation of hydrazyl radicals.
ST azo dye photoredn mechanism; ESR hydrazyl aminonaphthoxy
IT Radicals, preparation
RL: FORM (Formation, nonpreparative)
(formation of, in photoredn. of azo dyes, ESR of)
IT Electron spin resonance
(of aminonaphthoxy and hydrazyl radicals, from photoredn. of azo dyes)
IT Reduction, photochemical
(of azo dyes, ESR of radicals from)
IT Dyes, azo
(photoredn. of, ESR of radicals from)
IT 62681-71-4 62681-72-5 62681-73-6 62705-58-2

RL: PRP (Properties)
(ESR of)

IT 62681-88-3 62681-89-4 62681-90-7 62681-91-8 62681-92-9

RL: RCT (Reactant); RACT (Reactant or reagent)
(photoredn. of, ESR of radicals from)

=> => d que stat l33

L9 1 SEA FILE=REGISTRY ABB=ON PLU=ON 141025-34-5/RN
L14 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L9
L18 1 SEA FILE=REGISTRY ABB=ON PLU=ON 410538-28-2/RN
L19 1 SEA FILE=REGISTRY ABB=ON PLU=ON 250639-69-1/RN
L20 1 SEA FILE=REGISTRY ABB=ON PLU=ON 139966-00-0/RN
L21 1 SEA FILE=REGISTRY ABB=ON PLU=ON 90333-45-2/RN
L22 1 SEA FILE=REGISTRY ABB=ON PLU=ON 62681-89-4/RN
L23 1 SEA FILE=REGISTRY ABB=ON PLU=ON 62681-88-3/RN
L24 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L18
L25 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L19
L26 0 SEA FILE=HCAPLUS ABB=ON PLU=ON L20
L27 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L21
L28 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L22
L29 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L23
L33 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L14 OR (L24 OR L25 OR
L26 OR L27 OR L28 OR L29)

=> d l33 1-4 ibib abs hitstr hitind

L33 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:219481 HCAPLUS

DOCUMENT NUMBER: 142:262349

TITLE: Heat stable laked monoazo red pigment and its
manufacture

INVENTOR(S): Bindra, Amrit P.

PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 11 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 2005051050	A1	20050310	US 2003-657485	200309 08
WO 2005026264	A1	20050324	WO 2004-US28950	200409 03

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,
KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,
SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,

AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL,
PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:

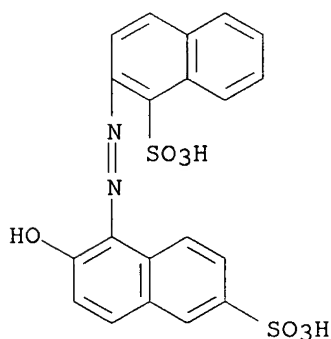
US 2003-657485

A

200309

08

- AB The title red pigment has a unique x-ray diffraction pattern. Use of certain surface active agents e.g. alkylamine-guanidine polyoxyethanol during the coupling reaction facilitates the subsequent formation of the laked monoazo red pigments in the β crystal form with a distinct X-ray diffraction pattern. The X-ray diffraction pattern comprises high diffraction intensities at diffraction angles of .apprx.10.4°, .apprx.17.5°, .apprx.18.7°, .apprx. 21.6° and .apprx.23°; moderate diffraction intensities at .apprx.14.4°, .apprx.15°, .apprx.24.4°, .apprx.24.8°, .apprx.25.2° and .apprx.26.2°; and low diffraction intensities at .apprx.about 15.4°, .apprx.17.5°, .apprx.17.8°, .apprx.19.3°, .apprx.20°, .apprx.21°, .apprx.21.8°, .apprx.26.6°, .apprx.28.6°, .apprx.30.2°, .apprx.31.6°, .apprx.32.1°, .apprx.34.8° and .apprx.38°.
- Also, the pH ranges described facilitate the formation of the laked monoazo red pigments in the β crystal form with a distinct X-ray diffraction pattern. Coating compns., ink compns., plastic compns., electrostatic toner compns., powder coating compns., paint compns., and paper compns. containing the red pigment have high chroma.
- IT **250639-69-1P**
RL: IMF (Industrial manufacture); PREP (Preparation)
(β crystal form; heat stable laked monoazo red pigment)
- RN 250639-69-1 HCAPLUS
- CN 1-Naphthalenesulfonic acid, 2-[(2-hydroxy-6-sulfo-1-naphthalenyl)azo]-, strontium salt (1:1) (9CI) (CA INDEX NAME)



● Sr

- IC ICM C09D011-00
ICS G03G009-00
- NCL 106031800; 106494000; 106402000; 106496000; 534581000; 534602000;
534883000; 524190000; 430108230

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 41, 42
IT **250639-69-1P**
RL: IMF (Industrial manufacture); PREP (Preparation)
(β crystal form; heat stable laked monoazo red pigment)

L33 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1992:257360 HCAPLUS
DOCUMENT NUMBER: 116:257360
TITLE: Preparation of mixed laked azo pigments
INVENTOR(S): Necas, Miroslav; Plechacek, Vaclav
PATENT ASSIGNEE(S): Czech.
SOURCE: Czech., 4 pp.
CODEN: CZXXA9
DOCUMENT TYPE: Patent
LANGUAGE: Czech
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

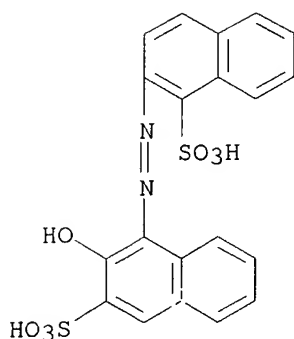
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 268606	B1	19900314	CS 1988-6215	198809 19
			CS 1988-6215	198809 19

PRIORITY APPLN. INFO.:~

OTHER SOURCE(S): MARPAT 116:257360

AB Red pigments for printing inks, varnishes, and plastics with brilliant modified shades are prepared by coupling a mixture containing 75-99.5% diazotized 2,4,5-H₂N(R₁)(R₂)C₆H₂SO₃H (R₁, R₂ = H, Cl, Me) and 0.5-25% diazotized 2,n-H₂NC₁₀H₆SO₃H (n = 1, 5, 6, 7, 8) with 3,2-HOC₁₀H₆CO₂H (I) and laking the zo dye with Ca, Ba, Mg, Sr, or Mn. A mixture containing 96 mol% Ca salt of 2,4-HO₃S MeC₆H₃NH₂ → I (II) and 4 mol% Ca salt of 1,2-HO₃SC₁₀H₆-NH₂ → I was prepared in this way and had a more bluish shade than II.

IT **141025-34-5**
RL: USES (Uses)
(mixts. containing, manufacture of, as pigments)
RN 141025-34-5 HCAPLUS
CN 1-Naphthalenesulfonic acid, 2-[(2-hydroxy-3-sulfo-1-naphthalenyl)azo]-, calcium salt (1:1) (9CI) (CA INDEX NAME)



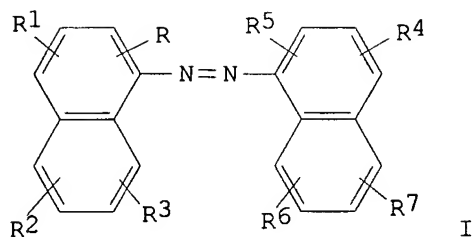
● Ca

IC ICM C09B065-00
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and
 Photographic Sensitizers)
 IT 73612-29-0 141025-33-4 **141025-34-5** 141025-35-6
 141025-36-7 141025-37-8
 RL: USES (Uses)
 (mixts. containing, manufacture of, as pigments)

L33 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
 ACCESSION NUMBER: 1984:425140 HCAPLUS
 DOCUMENT NUMBER: 101:25140
 TITLE: Recording solutions
 PATENT ASSIGNEE(S): Canon K. K., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 58176260	A2	19831015	JP 1982-57985	198204 09
PRIORITY APPLN. INFO.:			JP 1982-57985	198204 09

GI



AB The recording solns. contain compds. I [R, R1, R2, R3 = H, halogen, OH, NO2, Me, OMe, SO3R8; R4, R5, R6, R7 = H, OH, SO3R8; ≥ 1 substituent of R4-7 is OH; R8 = alkali metal, (substituted) ammonium, amine moiety] are claimed. The solns. for ink-jet recording containing I have excellent and well-balanced recording properties, storage stability, dissoln. stability in liquid solvents, and setting properties on printing paper, and give printed letters showing excellent weatherability, light resistance, water resistance, and alc. resistance. Thus, a SiO2 layer was laminated onto an alumina plate by sputtering; a HfB2 resistance-heating layer was laminated on the SiO2 layer to give a resistance-heating pattern by selective etching, where a SiO2 protective layer was laminated to give an elec. heat exchanger. A glass plate was connected with the exchanger so that its grooves agreed with the resistance-heating body to give a recording head. Sep., I (R6 = 8-OH; R7 = 6-SO3Na; R and R1-5 = H) [90333-47-4] 3, diethylene glycol 25, N-methyl-2-pyrrolidinone 20, and H2O 52 parts were mixed and dissolved to give a solution, which was used with the above recording head to five 150 h of continuous recording.

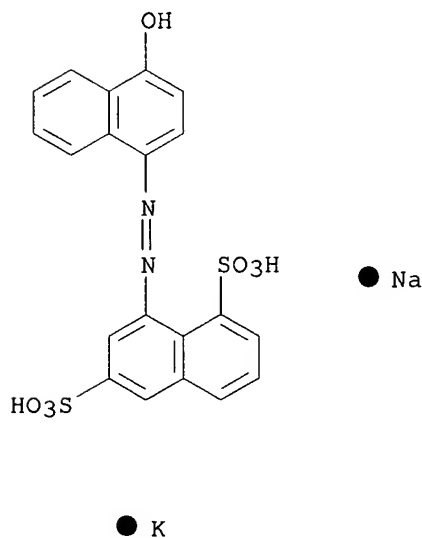
IT **90333-45-2**

RL: USES (Uses)

(inks, jet-printing, storage-stable, for continuous use)

RN 90333-45-2 HCAPLUS

CN 1,6-Naphthalenedisulfonic acid, 8-[(4-hydroxy-1-naphthalenyl)azo]-, monopotassium monosodium salt (9CI) (CA INDEX NAME)

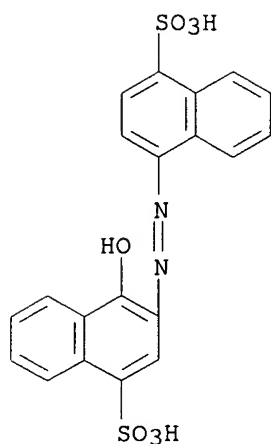


IC C09D011-00; C09D011-16
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 41
IT 2653-72-7 5851-03-6 5858-33-3 90333-33-8 90333-34-9
90333-35-0 90333-36-1 90333-37-2 90333-38-3 90333-39-4
90333-40-7 90333-41-8 90333-42-9 90333-43-0 90333-44-1
90333-45-2 90333-46-3 90333-47-4 90339-77-8
90339-81-4
RL: USES (Uses)
(inks, jet-printing, storage-stable, for continuous use)

L33 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1977:170246 HCAPLUS
DOCUMENT NUMBER: 86:170246
TITLE: ESR investigation of the radical intermediates
formed in the photoreduction of azo dyes
AUTHOR(S): Heijkoop, G.; Van Beek, H. C. A.
CORPORATE SOURCE: Lab. Chem. Technol., Univ. Technol., Delft,
Neth.
SOURCE: Recueil des Travaux Chimiques des Pays-Bas
(1977), 96(3), 83-5
CODEN: RTCPA3; ISSN: 0165-0513
DOCUMENT TYPE: Journal
LANGUAGE: English

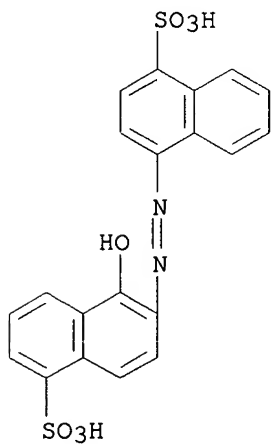
AB ESR spectra of hydrazyl and aminonaphthoxy radicals formed upon
photoredn. of azo dyes were measured. For the hydrazyl radicals the
results obtained further confirm previous investigations of the
mechanism of photoredn. of azo dyes. The direct identification in
photoreduced dye solns. of aminonaphthoxy radicals, which are formed
in the oxidation reduction equilibrium of aminonaphthols and iminoquinones
provides strong evidence for previously proposed mechanisms for the
disproportionation of hydrazyl radicals.

IT **62681-88-3 62681-89-4**
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoredn. of, ESR of radicals from)
RN 62681-88-3 HCAPLUS
CN 1-Naphthalenesulfonic acid, 4-hydroxy-3-[(4-sulfo-1-
naphthalenyl)azo]-, monosodium salt, radical ion(1-) (9CI) (CA
INDEX NAME)



● Na

RN 62681-89-4 HCAPLUS
 CN 1-Naphthalenesulfonic acid, 5-hydroxy-6-[(4-sulfo-1-naphthalenyl)azo]-, monosodium salt, radical ion(1-) (9CI) (CA INDEX NAME)



● Na

CC 22-2 (Physical Organic Chemistry)
 Section cross-reference(s): 40
 IT **62681-88-3** 62681-89-4 62681-90-7 62681-91-8
 62681-92-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (photoredn. of, ESR of radicals from)